OTHER AGENCIES

NEW JERSEY MEADOWLANDS COMMISSION

District Zoning Regulations
Drainage; Floodplain Management

Proposed Amendments: N.J.A.C. 19:4-4.4, 8.6, 9.2, 9.3, 9.5, 9.10, 9.13 through 9.18, 9.20 and 9.26

Authorized By: New Jersey Meadowlands Commission,

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Robert R. Ceberio, Secretary

Authority: N.J.S.A. 13:17-1 et seq., specifically 13:17-6(i)

Calendar Reference: See Summary below for explanation of exception to calendar requirement.

Proposal Number: PRN 2005-418.

A public hearing on this matter will be held on Tuesday, December 6, 2005 at 10:00 am at the following location:

New Jersey Meadowlands Commission
One DeKorte Park Plaza
Lyndhurst, New Jersey 07071

Submit written comments by the close of business on January 6, 2006 to:

Ileana Kafrouni, P.P., AICP
Director of Land Use Management
New Jersey Meadowlands Commission
One DeKorte Park Plaza
Lyndhurst, New Jersey 07071

It is requested (but not required) that anyone submitting written comments also include a diskette containing an electronic version, preferably in Microsoft Word. Interested persons may obtain a copy of the proposed amendments through the following methods:

1. The proposed amendments may be downloaded electronically from the Commission's website. They may be accessed at http://www.njmeadowlands.gov/land_use/index.cfm.

2. The proposed amendments may be inspected during normal office hours at the Commission's Public Information Center at One DeKorte Park Plaza in Lyndhurst.

The agency proposal follows:

Summary

The New Jersey Meadowlands Commission (NJMC) regulates the construction and alteration of stormwater conveyance systems in order to, per N.J.A.C. 19:4-1.2(a)14, control surface water runoff and prevent flooding and other damage to land and to encourage the control of soil erosion and sedimentation.

The New Jersey Department of Environmental Protection (NJDEP), adopted new Stormwater Management Rules, N.J.A.C. 7:8, on February 3, 2004, just two weeks prior to the NJMC drainage rule amendments which were adopted on February 17, 2004. The NJMC's revised drainage regulations, N.J.A.C. 19:4-8.6, do not fully conform with the requirements of the Stormwater Management Rules, which are also enforced by the NJMC per N.J.A.C. 19:4-8.6(b)1. The lack of conformity is due both to the independent development of the drainage regulations and stormwater rules as well as the unique hydrologic nature of the Meadowlands.

As a result of the need to more closely conform to NJDEP regulations and to further the goal of reducing chronic flooding within the Meadowlands District, the NJMC is proposing to amend N.J.A.C. 19:4-8.6.

The Department of Homeland Security's Federal Emergency Management Agency (FEMA) has developed criteria for floodplain management as required under Section 206 of the Flood Disaster Protection Act of 1973 (P.L. 93-234) and the National Flood Insurance Act of 1968, as amended, (Title XIII of the Housing and Urban Development Act of 1968, P.L. 90-448), 42 U.S.C. §4001-4128, and 44 CFR Part 65.

The NJMC participates in the National Flood Insurance Program's (NFIP) Community Rating System (CRS), a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. As a result of this participation, the NJMC is developing the Hackensack Meadowlands Floodplain Management Plan (Plan). The development of the Plan will highlight a number of minor updates necessary to N.J.A.C. 19:4-8.6 to further the goal of reducing flooding.

Another benefit of participation in the NFIP CRS program is that flood insurance premium rates within the Hackensack Meadowlands District are discounted to reflect the reduced flood risk resulting from community actions meeting the three goals of the CRS to: (1) reduce flood losses; (2) facilitate accurate insurance rating; and (3) promote the awareness of flood insurance.

As a condition of continued eligibility in the NFIP, the NJMC must remain in compliance with 44 CFR §60.3(d) of the NFIP regulations by amending or supplementing the existing floodplain management measures in effect to reflect the latest Flood Insurance Study (FIS) and Flood Insurance Rate Map (FIRM) modifications.

The NJMC staff was authorized by the Commission on August 1, 2005, to proceed with proposed

rulemaking to comply with the FEMA's NFIP regarding the revised FIS and FIRM panels and to update the drainage regulations.

A summary of the proposed amendments follows:

N.J.A.C. 19:4-4.4 Application for zoning certificate; technical requirements: In subparagraph (d)1i, sub-subparagraph (17) is added to require the elevation to which floodproofing is provided in structures that require such measures. In subparagraph (d)ii, sub-subparagraph (2) is added to clarify the requirement for a submittal of a licensed-professional's certification regarding the floodproofing methods used in nonresidential structures. These changes are proposed to be consistent with FEMA's model flood plain management regulations.

N.J.A.C. 19:4-8.6 Drainage: In paragraph (a)2, language is added to allow the use of vegetated channels to convey stormwater runoff. This proposed additional language provides greater flexibility to design professionals and, by permitting surface stormwater collection and conveyance systems, serves to improve the quality of stormwater runoff and to increase the likelihood of proper maintenance. Grass swales and other vegetated channels have a reported capacity to reduce the level of suspended solids in stormwater runoff.

Paragraph (a)4 is amended to more specifically define what hydrologic and hydraulic studies are necessary to verify the capacity of receiving stormwater collection systems. This proposed amendment provides for uniformity in the level of detail required of design professionals to demonstrate that proposed stormwater systems will not increase downstream flooding when using an existing collection system. This revision also allows the design professional the option of not completing a capacity study provided that peak flows do not increase.

Paragraph (a)5 is amended to clarify the requirement that new development or redevelopment shall maintain existing drainage patterns. Specifically, construction may not block existing drainage systems or overland flow patterns to the detriment of neighboring properties for storms of up to the 25-year event.

Paragraph (a)6 is proposed to be deleted to remove an outdated and unclear requirement that design professionals shall address stormwater quality with "methodologies approved on a case-by-case basis." As a clarification, paragraph (a)7 has been updated, as discussed below, to clarify that design professionals shall submit water quality designs that conform to N.J.A.C. 7:8, the Stormwater Management Rules.

Paragraph (a)7 has been updated to clarify the required contents of an operation and maintenance manual in accordance with N.J.A.C. 7:8, the Stormwater Management Rules, and has been recodified as paragraph (a)6 following a deletion of that subsection.

N.J.A.C. 19:4-8.6(b)1 has been amended to correct the reference, "NJDEP's Stormwater Management Rules," to the appropriate heading of "the Stormwater Management Rules." Additionally,

a minor clarification has been proposed regarding how petroleum hydrocarbons (oil, gasoline, etc.) are to be addressed when they may potentially come into contact with stormwater. Stormwater quality measures shall be selected that address the dual purpose of removing suspended solids and petroleum hydrocarbons.

In paragraph (b)2, the language is clarified to specify the source of the rainfall data to be used for the development of rainfall intensities and/or rainfall depths for the 25-year design storm and the NJDEP Water Quality Storm. Specifically, the magnitude of the 25-year rainfall depth and/or rainfall intensity specific to each site must be developed from the "Precipitation-Frequency Atlas of the United States," National Oceanic and Atmospheric Administration (NOAA) Atlas 14, Volume 2, Version 2. Both the internet location of the document as well as the physical address of the supporting NOAA office are provided. The website allows the user to click on specific regions of New Jersey for rainfall intensity and depth information at that specific location. An outline of the above document, specific to New Jersey and available from the National Resources Conservation (NRCS) Service New Jersey State Office, is also referenced. These documents provide rainfall totals and intensities specific to the State of New Jersey, and govern what rainfall data is used by professional engineers in the State of New Jersey. As for the NJDEP Water Quality Storm, the storm hydrograph must be developed from N.J.A.C. 7:8-5.5, the NJDEP Stormwater Management Rules. The Stormwater Management Rules set design and performance standards for the quality and quantity of stormwater discharge from new construction and redevelopment sites. There is no change to the storms that must be addressed; rather, this addition is meant to assist design professionals in locating the required sources of rainfall design data.

In subparagraph (b)3i, the proposed description of the appropriate use of the Rational and Modified Rational Method for peak flow and peak runoff volume determination has been revised to conform with the description of in the guidance manual, “Standards for Soil Erosion and Sediment Control,” N.J.A.C. 2:90-1.3, promulgated by the New Jersey State Soil Conservation Committee. This manual provides technical standards and guidance to assure that soil, water, and related natural resources are managed during development in a manner that prevents or minimizes soil loss and related environmental damage. Locations where to obtain the manual have also been provided. Specifically, an antecedent precipitation factor has been incorporated into the runoff coefficient and is also included in Figure 8-2. This multiplier accounts for soil saturation during larger storms, such as the 25-year event. This change will have no impact to impervious lots as the multiplier only impacts pervious cover.

In subparagraph (b)3iii, the proposed description of allowable methodologies for developing the time of concentration for watersheds has been updated to reflect the maximum sheet flow length of 150 feet dictated by the NJDEP and the Federal Natural Resources Conservation Service (NRCS). This proposed amendment is minor and merely clarifies the maximum sheet flow length that was established by the NRCS in 1993. The clarification differentiates between a maximum sheet flow length of 150 feet for

paved surfaces and 100 feet for vegetated surfaces.

In subparagraph (b)4ii, language is proposed regarding pressure flow. Specifically, stormwater pipe is not typically designed to carry stormwater under pressure, as pipe joints may open up. The proposed addition states that stormwater pipe systems may not operate under pressure unless justified by the design professional and approved by the NJMC.

In subparagraph (b)4iv, language is added to prohibit corrugated metal and steel pipe. Specifically, existing corrugated metal and steel pipe may not be used unless their condition is verified. These pipe materials have a history of sudden failure. Such failures are a public safety hazard and may lead to additional flooding.

In subparagraph (b)4vi, language is added to require flexible, watertight connections between pipes and all structures, including manholes, catch basins, and other pipe connection. Due to soil conditions on most sites within the District and the potential for differential settlement, such connections reduce the likelihood of pipe failure at connection points and do not add significant costs to the installation or purchase of stormwater collection system components.

In subparagraph (b)4vii, language is added to clarify the hydraulic calculations required when a stormwater outfall is in tidal waters. Specifically, a statement has been added that the backwater condition generated by the mean high water (MHW) in tidally-influenced waters needs to be analyzed. This statement clarifies to the design professional the appropriate tailwater elevation to be analyzed in conjunction with tidal areas that require tide gates.

In subparagraph (b)4viii, additional language is proposed regarding the installation of outlet scour protection. Specifically, the tailwater elevation, when designing scour control in tidal areas, has been established as the mean low water (MLW) elevation. This assumption is conservative as it provides, in tidal areas, for a low tailwater elevation when water is exiting a proposed stormwater system. Such a condition will provide for conservative scour control sizing due to a higher outfall velocity than if the tailwater was at a higher elevation, such as MHW. Although this elevation is often used by design professionals, the amendment to the subparagraph ensures uniformity of reviews by the NJMC.

Subparagraph (b)4ix is revised to replace the words "underground drainage system" with "stormwater collection system" and additional language is added to account for situations where an underground, or direct, connection from roof leaders to a stormwater collection system may be impractical, allowing interim discharge to a stable, vegetated area.

Subparagraph (b)4x incorporates the Uniform Construction Code (UCC) guideline that roof stormwater collection and discharge systems must be able to pass a storm intensity of five inches-per-hour. This is a Federal guideline and is often confused with the NJMC's required rainfall intensities for stormwater collection systems not associated with a proposed roof structure. This addition is meant to clarify the Federal and NJMC rainfall intensities and their appropriate application.

In paragraph (b)5, subparagraphs (b)5i-vi are deleted to remove outdated language on the design of detention basins that does not conform to current New Jersey design and safety standards (see N.J.A.C. 7:8). This language created a conflict between NJMC regulations and current regulations enforced under the Stormwater Management Rules.

Paragraph (b)5 is replaced with language describing three specific exceptions for detention basins from N.J.A.C. 7:8, the Stormwater Management Rules and the New Jersey Stormwater BMP Manual, available online at www.state.nj.us/dep/stormwater/bmp_manual2.htm, listed as subparagraphs (b)5i through iii. The BMP Manual has been prepared by the NJDEP to provide guidance on the design of structural and nonstructural measures mandated by the Stormwater Management Rules to recharge groundwater, improve stormwater quality, and manage stormwater quantity. The exceptions include the reduction of the design storm from the 100-year event to the NJMC design storm, the 25-year event; the need for backwater analysis in tidal areas; and the stipulation that infiltration systems may only be used in locations that will not migrate pollutants to groundwater. These exceptions reduce the burden on design professionals attempting to develop stormwater detention systems in the District. Subparagraph (b)5vii is recodified as subparagraph (b)5iv.

At N.J.A.C. 19:4-8.6 (b)6, subparagraphs (b)6i and ii are deleted in their entirety in order to remove the ambiguous pollutant removal requirement of "maximum extent feasible," which may create a significant design, construction, and financial burden. Paragraph (b)6 is amended to reference N.J.A.C. 7:8, the Stormwater Management Rules, and includes four clarifications in new subparagraphs (b)6i through iv.

Subparagraph (b)6i is a requirement that stormwater collection systems be installed "off-line." This requirement reduces the likelihood that collected pollutants will be discharged during large storm events and reduces the chance of a system failing because a single stormwater quality control device is not functioning as designed.

Subparagraph (b)6ii is a prohibition of using similar stormwater treatment devices in series. This stipulation is currently being adopted by the NJDEP. The use of identical treatment systems in series to achieve 80-percent removal when the individual systems do not independently achieve 80-percent removal is erroneous.

Subparagraph (b)6iii indicates that the stormwater management measures, once constructed, may not receive runoff until the site has been stabilized. This prohibition will prevent said systems from clogging prior to typical use.

Subparagraph (b)6iv states that subsurface stormwater management systems must have a clearly identified method of clean-out.

Subchapter 9. Flood Plain Management

N.J.A.C. 19:4-9.2 Purposes is revised to replace the word "Commission" with the word "NJMC."

The term "Commission" is often used to refer to the NJMC as an entity. N.J.A.C. 19:4-2.1(a)12 was amended, as of July 5, 2005, to define the "Commission" as the "Board of Commissioners" to provide a clear definition of the seven-member board that constitutes the NJMC. The amendments provided an important differentiation between the Board of Commissioners and the NJMC as an entity, as the Board of Commissioners must take certain actions. Therefore, the proposed amendment helps clarify it is the NJMC, not only the Board of Commissioners, which reviews applications. A minor grammatical revision is also proposed to change the word "insure" to the word "ensure."

N.J.A.C. 19:4-9.3 Words and phrases defined: This section defines the terms used throughout the District's Flood Plain Management regulations. The definitions are proposed to be updated to be consistent with FEMA's model flood plain regulations.

The term "area of shallow flooding" is revised to update the flood zone designation on the FEMA Flood Insurance Rate Map and to specify that a designated zone is one with a one percent or greater chance of flooding to an average depth of one to three feet. The amendment also clarifies that flooding is characterized by ponding or sheet flow.

The term "development" is revised to add storage of equipment or materials as a type of development.

The term "elevated building" is revised to change the word "flood" to the word "floor" to clarify a typographical error. The reference to elevated buildings with a lower area enclosed with breakaway walls has been eliminated to be consistent with FEMA's model floodplain regulations.

The term "FIA" is added to define the agency, the "Federal Insurance Administration," an agency within FEMA that administers the National Flood Insurance Program.

The terms "flood Insurance Rate Map" and "flood insurance study" are revised to change the words "Federal Emergency Management Agency (FEMA)" to the words "Federal Insurance Administration (FIA)" to reflect the appropriate administering agency.

The term "highest adjacent grade" is added to define the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

The term "historic structure" is added to define historic structures as being listed on national, state, or local inventories of historic places, either individually or as part of a historic district.

The term "manufactured home" is revised to bring the definition into compliance with the New Jersey Uniform Construction Code by deleting the dimensions and specifications of a manufactured home in the existing rule and adding a reference to the existing rules regarding manufactured homes at N.J.A.C. 5:23.

The term "new construction" is amended to clarify that the regulations apply to both new structures and subsequent improvements.

The term "recreational vehicle" is added to be consistent with FEMA's model regulations, listing

the specific characteristics including single chassis construction, maximum size of 400 square feet, self-propelled or permanently towable, and designed for temporary, not permanent, living quarters.

The term "start of construction" is revised to clarify the actual start of construction for substantial improvement cases to changes to the interior of the building with or without exterior alterations.

The term "substantial improvement" is revised to also apply to structures that have incurred substantial destruction; to clarify that safe living conditions must be determined by the local code enforcement official; and that any alterations to a historic structure must not preclude its continued designation as such to maintain its exemption as stated in this definition. Rehabilitations and additions are also included as forms of substantial improvement.

N.J.A.C. 19:4-9.5 Basis for establishing the areas of special flood hazard amendments are proposed to be consistent with FEMA's model flood plain management regulations. The word "FEMA," is replaced with the word "FIA," which stands for "Federal Insurance Administration," here and throughout the subchapter. The date of the Flood Insurance Study is updated to September 30, 2005, to incorporate the most recent study and the panel numbers of the updated FIRM maps are included.

N.J.A.C. 19:4-9.13 Duties and responsibilities of the Chief Engineer: In subparagraph (a)4, the word "habitable" is deleted as this terminology is not used in FEMA's current regulations in this context. In paragraph (a)6, the phrase "base flood data" is changed to "base flood elevation data" for clarity. These amendments are proposed to be consistent with FEMA's model floodplain management regulations.

N.J.A.C. 19:4-9.14 Variances from floodplain regulations: In subsection (a), the words "Executive Director" are replaced by the word "Commission" in response to a recent rule amendment regarding NJMC variance procedures to indicate that the Commission, and not the Executive Director, is the appropriate authority to decide variances.

N.J.A.C. 19:4-9.15 Standards for the granting of variances: In subsection (b), language related to historic structures is modified to be consistent with FEMA's model flood plain management regulations, specifically that a variance granted for a historic structure shall not change its designation as a historic structure. In addition, the proposed variance is minimum necessary to preserve the historic character and design of the structure.

N.J.A.C. 19:4-9.16 Conditions: This section is amended in response to a recent rule amendment regarding NJMC variance procedures to indicate that the decision of the Commission, and not the Chief Engineer, may have conditions imposed upon it.

N.J.A.C. 19:4-9.17 Written decision and records: This section is amended to reflect the recent rule amendment regarding NJMC variance procedures and indicates that the timing of written decisions is based upon the new procedure and not the previous eight-week time limit.

N.J.A.C. 19:4-9.18 Appeals: This section is amended in response to a recent rule amendment

regarding NJMC variance procedures to indicate that appeals may be made from a decision of the Commission, rather than the Executive Director or Chief Engineer. The section is also amended to provide the correct citation for the appeals section at N.J.A.C. 19:4-4.19.

N.J.A.C. 19:4-9.20 Buildings: In subsections (a) and (b), language is modified to be consistent with FEMA's model flood plain management regulations. Specifically, in both subsections, language is added to require drainage paths around proposed structures on slopes in order to direct floodwaters around and away from the structures. In subsection (b), basements are required to be elevated a minimum of one foot above the base flood elevation. In the case where a proposed structure is not constructed a minimum of one foot above the base flood elevation, subsection (b) is revised to add sanitary facilities to the portions of the structure that are required to meet the criteria listed in paragraph (b)1 through 3. In paragraph (b)1, the tense of the word "floodproof" is amended to "floodproofed" for clarity. In subsection (c), the last two sentences are deleted as they are repeated at N.J.A.C. 19:4-9.23(b).

N.J.A.C. 19:4-9.26 Enclosure openings: In subsection (a), language is added to be consistent with FEMA's model flood plain management regulations. Specifically, the language clarifies the type of design required for three uses below the lowest floor, including areas for vehicle parking, building access or storage other than in a basement, that will equalize the hydrostatic flood forces on the exterior walls of the structure. In addition, to be consistent with terminology used in N.J.A.C. 19:4-9.4, the word "registered" is deleted and the words "licensed" and "registered" are added to refer to professional engineers and architects, respectively.

As the Commission has provided a 60-day comment period in this notice of proposal, this notice is excepted from the rulemaking calendar requirement to N.J.A.C. 1:30-3.3(a)5.

Social Impact

The NJMC participates in the National Flood Insurance Program's (NFIP) Community Rating System (CRS), a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. As a condition of continued eligibility in the NFIP, the NJMC must remain in compliance with 44 CFR §60.3(d) of the NFIP regulations.

The proposed amendments to the NJMC's floodplain management regulations reflect the latest Flood Insurance Study (FIS) and Flood Insurance Rate Map (FIRM) modifications, which enable the NJMC's continued participation in the CRS. If the proposed rules are not amended to be consistent with FEMA's model flood plain regulations, the NJMC's participation in the NFIP may be suspended.

With regard to the drainage regulations, the proposed amendments have been developed to bring the NJMC drainage rules into closer conformity to NJDEP rules and to further the goal of reducing chronic flooding within the Meadowlands District.

Therefore, no negative social impacts are anticipated from the implementation of the proposed amendments.

Economic Impact

Concerning economic impacts, the proposed amendments primarily impact the property owners within the Meadowlands District. The NJMC's continued participation in the CRS program results in flood insurance premium discounts to District property owners. However, if these floodplain management measures are not adopted by the NJMC, the NJMC could be subject to suspension from the NFIP, resulting in higher flood insurance rates in the District.

District communities also experience a secondary impact from the NJMC's participation in the CRS program. The discounted insurance rates provide an incentive for property owners to remain in the District, resulting in a positive economic impact on the community. Maintaining a good rating within the CRS program results in minimized carrying costs of development, maintenance of structures in floodplains in the Meadowlands District and minimized losses due to flood damage.

There is no cost to the general public to comply with the proposed floodplain management rules because they apply to improvements within designated floodplains. By promoting development in accordance with FEMA regulations, developers would likely experience a long-term cost savings due to planned decreases in the instances and severity of flooding, and less damage to structures built in accordance with these regulations, as opposed to structures built in the absence of such regulations.

There is likewise no cost to the general public to comply with the proposed amendments to the drainage rules. Developers may experience an increase in compliance costs due to the infrastructure required to be installed and maintained to comply with the rule amendments. However, the economic impacts are outweighed by the environmental benefits, including increased water quality through decreased sedimentation in waterways, decreased amounts of total suspended solids and nutrient loads caused by site runoff, and maintaining or decreasing runoff levels between pre- and post-developed sites.

Federal Standards Statement

The Hackensack Meadowlands District is located within the Federally designated Coastal Zone Management Area for New Jersey (designated in accordance with 15 CFR §923.53(a)(1)). The NJMC acts as the lead coastal planning and management agency for the Meadowlands District under the guidance of the New Jersey Department of Environmental Protection (NJDEP).

The NJMC District Zoning Regulations serve as a regulatory tool for meeting the goals and rules established by the New Jersey Coastal Management Program. The proposed amendments do not contain any requirements or standards in excess of those imposed under Federal law.

The Department of Homeland Security's Federal Emergency Management Agency (FEMA) has developed criteria for floodplain management as required under Section 206 of the Flood Disaster Protection Act of 1973 (P.L. 93-234) and the National Flood Insurance Act of 1968, as amended, (Title XIII of the Housing and Urban Development Act of 1968, P.L. 90-448), 42 U.S.C. §4001-4128, and 44 CFR Part 65. The NJMC participates in the National Flood Insurance Program's (NFIP) Community Rating System (CRS), a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. As a condition of continued eligibility in the NFIP CRS program, the NJMC must remain in compliance with 44 CFR §60.3(d) of the NFIP regulations.

The drainage regulations closely follow those enforced by the NJDEP, the Stormwater Management Rules (N.J.A.C. 7:8). These rules, in turn, were developed to comply with the Water Quality Act of 1987 (WQA), Section 402 (p) of the Federal Clean Water Act (33 U.S.C. §1251 *et seq.*).

Jobs Impact

The proposed amendments are expected to have some impact on job retention and creation in the District. The proposed floodplain management rule amendments update existing regulations in response to updates required by FEMA, and the proposed drainage regulations amend existing drainage regulations to be more consistent with statewide water quality and water quantity control measures. These amendments generally relate to design requirements and infrastructure that are typical components of the site development process. In most instances, the proposed amendments would require additional infrastructure, which may have a slight positive impact on construction and maintenance jobs. Also, the intent of the revised regulations is to reduce flooding, which should have an overall positive impact on employment in the District by limiting disruption to job operations and damage due to flooding.

Agriculture Industry Impact

The proposed amendments will not have an impact on agriculture in the State of New Jersey.

Regulatory Flexibility Analysis

The rules of the NJMC impose reporting, record keeping or other compliance requirements on small businesses. Under terms of the Regulatory Flexibility Act N.J.S.A. 52:14B-16 et seq., small businesses are those that employ less than 100 full-time employees. Small businesses in the District include such groups as property owners, tenants, applicants and developers.

The NJMC does not administer its rules differently based on the size of a business because the mandates of the agency outlined in its enabling statute, N.J.S.A. 13:17-1 et seq., require that they be

uniformly imposed upon all property owners in the District. N.J.S.A. 13:17-1 et seq. provides no differentiation in compliance requirements specifically based on business size.

Accordingly, the proposed amendments provide no differentiation in compliance requirements based on business size. In order to provide for uniform and consistent applicability of these rules within the District, no differential treatment is afforded to small businesses. All businesses should be able to comply with the rules utilizing the established procedures. Compliance costs and requirements are discussed in the Economic Impact and Summary above, respectively.

Smart Growth Impact

Although the provisions of the New Jersey State Development and Redevelopment Plan do not apply to the NJMC (pursuant to N.J.S.A. 52:18A-206), the NJMC Master Plan sets forth smart growth principles to guide growth within the Meadowlands District consistent with State policy. The NJMC rules serve as the implementation tool of this policy.

Smart growth principles include making development decisions predictable, fair, and cost effective. The proposed amendments would enable NJMC's continued participation in the NFIP CRS program and clarify the requirements and procedures for preparing stormwater management designs for development, and thereby would promote smart growth in the Meadowlands District.

Full text of the proposal follows (additions indicated in boldface **thus**; deletions indicated in brackets **[**thus**]**):

SUBCHAPTER 4. ADMINISTRATION

19:4-4.4 Application for zoning certificate; technical requirements

(a) - (c) (No change.)

(d) The application shall include such other additional information as required below, based on the specific type of application, to determine compliance with these regulations, including:

1. Requirements for new buildings and additions:

i. In addition to the requirements of (c) above, the site plan shall include the following:

(1) - (14) (No change.)

(15) Building elevations, including details of façade materials; [and]

(16) (No change.)

(17) The elevation in relation to mean sea level to which any structure has been floodproofed.

ii. Other plans and reports to be submitted:

(1) Drainage plans and calculations prepared in accordance with N.J.A.C. 19:4-8.6[.]; and

(2) Certification by a New Jersey-licensed professional engineer or registered architect that the floodproofing methods for any nonresidential structure meet the floodproofing criteria in N.J.A.C. 19:4-9.20(b).

2. - 10. (No change.)

(e) - (f) (No change.)

SUBCHAPTER 8. SITE PLAN REQUIREMENTS

19:4-8.6 Drainage

(a) General requirements for drainage are as follows:

1. (No change.)

2. All vehicular use areas shall be drained so as to direct surface water runoff to a stormwater drainage system for eventual subsurface or stream disposal. **Conveyance via vegetated channels is acceptable but shall be supported with calculations verifying stability during peak flows.**

3. (No change.)

4. The receiving stormwater drainage system (pipe flow or open channel flow) shall be analyzed to ensure that it has the additional capacity necessary to handle any increase in stormwater flow **[**using the Manning equation in Figure 8-4 in (b)4i below**]** **during the 25-year design storm. The analysis shall include all upstream and downstream runoff peak contributions, estimated per N.J.A.C. 19:4-8.6(b)3, to a downstream point established by the NJMC**. If the receiving stormwater drainage system is at or over capacity, **or is not analyzed**, detention **and/or infiltration** facilities shall be provided in order to maintain site runoff **peak flow** at pre-development levels.

5. The size of the drainage area shall include on-site and off-site lands contributing stormwater to the discharge point. **Additionally, the pre-development drainage patterns of any off-site contributions shall be maintained unless a compensatory system is provided, which, at a minimum, maintains the pre-development on-site capacity to carry neighboring stormwater runoff peak flow during the 25-year storm.**

[6. Water quality basins or other structures or water quality methodologies approved on a case-by-case basis by the NJMC shall be provided.**]**

[7.**]6.** A**n operation and** maintenance **[**plan**]** **manual** for stormwater drainage systems**, including stormwater quality measures,** shall be provided to ensure proper function and operation of the system **and in a manner consistent with N.J.A.C. 7:8, the Stormwater Management Rules. The operation and maintenance manual shall be updated as necessary. Updates shall be provided to the NJMC.**

(b) Design requirements for drainage are as follows:

1. The applicant shall provide information sufficient for the NJMC to determine compliance with

the applicable sections of N.J.A.C. 7:8, [NJDEP's] **the** Stormwater Management Rules. **With regard to water quality, proposed development and redevelopment that may introduce petroleum hydrocarbons to runoff water shall install stormwater management measures that target and remove such pollutants.**

2. All drainage systems shall be designed for a 25-year storm event. **The magnitude of the 25-year rainfall depth and/or rainfall intensity specific to each site shall be developed from "Precipitation-Frequency Atlas of the United States," National Oceanic and Atmospheric Administration (NOAA) Atlas 14, Volume 2, Version 2, incorporated herein by reference, as amended and supplemented. This document is available from the NOAA National Weather Service, Office of Hydrologic Development, Hydro-meteorological Design Studies Center, Bldg. SSMC2 W/OHD13, 1325 East-West Highway, Silver Spring, MD 20910-3283, or online at http://hdsc.nws.noaa.gov/hdsc/pfds/orb/nj_pfds.html. An outline of the above document, specific to New Jersey, is available from the National Resources Conservation Service (NRCS) New Jersey State Office (NJSO). This outline, NJ Bulletin No. NJ210-4-1, dated September 8, 2004, incorporated herein by reference, as amended and supplemented, is available through the NRCS New Jersey State Office, 220 Davidson Avenue, 4th Floor, Somerset, New Jersey 08873, or online at http://www.state.nj.us/dep/damsafety/nrcs_24hour_rainfall.pdf. Per N.J.A.C. 7:8, the Stormwater Management Rules, properties within the District and outside the FEMA Special Flood Hazard Area (SFHA) may be required to meet water quantity control requirements for events greater than the 25-year event. Additionally, the water quality design storm shall be developed pursuant to N.J.A.C. 7:8-5.5.**

3. Runoff estimation:

i. The Rational Method, utilizing the rational formula listed in Figure 8-2 below, shall be used for computing the runoff [of]**from** any drainage area up to 20 acres[for each discharge point]. **The antecedent precipitation factor (Ca) shall be used with the Rational and Modified Rational Method, as shown in the "Standards for Soil Erosion and Sediment Control in New Jersey," N.J.A.C. 2:90-1, incorporated herein by reference, as amended and supplemented.** For areas larger than 20 acres, the [U.S.] National Resources Conservation Service's (NRCS's) Technical Release No. 55 (TR-55), "Urban Hydrology for Small Watersheds," incorporated herein by reference, as amended and supplemented, or equivalent approved by the NJMC, shall be used[, a]**. A** copy [of which] may be obtained from the [New Jersey Natural Resources Conservation Service located at 51 Gibraltar Drive, Suite 2E, Morris Plains, NJ 07950]**] NRCS New Jersey State Office, 220 Davidson Avenue, 4th Floor, Somerset, New Jersey 08873 or online at the NRCS website,http://www.wcc.nrcs.usda.gov/hydro/hydro-tools-models-tr55.html; and**

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Figure 8-2

Rational Formula

$$Q = ciA$$

where:

Q= Peak flow in cubic feet per second (cfs)

c = Runoff coefficient (weighted) **x the antecedent precipitation factor**

i = Rainfall intensity in inches per hour (in/hr)

A= Drainage area in acres (ac)

ii. (No change.)

iii. The time of concentration (T_c) used **[**in the rational method**]** shall be calculated using the NRCS TR-55 methodology or other method approved on a case-by-case basis by the NJMC. **The time of concentration shall have a sheet flow component of no greater than 150 feet on paved surfaces. Vegetated surfaces shall have a sheet flow component no greater than 100 feet. The minimum time of concentration shall be six minutes.**

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4. Stormwater drainage collection system design requirements are as follows:

i. (No change.)

ii. Pipe sizes shall be determined using the design runoff, conduit entrance conditions and hydraulic capacity. **No stormwater systems may be designed to function under a pressure condition unless justified by the design professional and approved by the NJMC.**

iii. (No change.)

iv. The materials used in the construction of storm sewers shall be reinforced concrete, ductile iron, corrugated polyethylene, or other as approved by NJMC. Corrugated metal and steel shall not be permitted. **Should existing corrugated metal or steel pipes be incorporated into a proposed system, their condition shall be verified.**

v. (No change.)

vi. All transitions in pipe slopes, junctions and changes in pipe sizes shall be confined to manholes, catch basins, or other accessible structures designed for one or more of these purposes. **Additionally, all manhole, catch basin, and other pipe connections to structures shall be equipped with flexible, water-tight joints.**

vii. Where a drainage system discharges to a tidal waterway, tide gates, constructed of cast iron or other corrosion-proof material, shall be provided at every discharge point. **Additionally, the backwater condition generated by the mean high water (MHW) tide shall be considered in the drainage calculations associated with tidally influenced areas. Data on the tide elevations throughout the district is available from the NJMC.**

viii. Where a drainage system starts at or discharges into a stream, ditch or other body of water, a concrete headwall with wing-walls and a rip-rap apron pad, or other as approved by the NJMC, shall be constructed. **The apron pad and/or scour hole design shall consider the tailwater elevation to be equal to the mean low water (MLW) elevation if tidally influenced.**

ix. Roof runoff shall be conveyed via roof leaders to [an underground drainage] **a stormwater**

collection system, where feasible**. Should direct connection to a stormwater collection system be impractical, roof leaders shall first discharge to stable, vegetated areas, where feasible, and then be directed to a stormwater collection system.**

x. Roof leaders and their respective receiving systems shall be sized to pass a minimum rainfall intensity per N.J.A.C. 5:23-3.15(b)12ii of the Uniform Construction Code (UCC), incorporated herein by reference, as amended and supplemented.

[5. Detention basin design requirements are as follows:

i. Underground detention basins may be provided utilizing solid material pipe or perforated pipe. If perforated pipe is utilized, the percolation rate of the underlying material shall be adequate to ensure that the water table is at an elevation that allows the detention system to empty.

ii. Detention basins shall accommodate site runoff generated from 25-year design storm events so that pre-development peak flow rates at the critical time of concentration are not increased.

iii. Detention basins shall be analyzed for a 100-year storm event to ensure stability of downstream structures and stormwater management systems.

iv. In order to address water quality, detention basins shall be designed for the water quality design storm of 1.25 inches of rainfall falling uniformly in two hours, such that no more than 90 percent will be discharged prior to 36 hours, or 18 hours for residential development.

v. Detention basins shall be equipped with water control structures consisting of orifice and/or weir control devices. The minimum diameter of any outlet orifice shall be 2½ inches.

vi. The sides of a detention basin shall not exceed a slope of 3:1, unless otherwise approved by the NJMC. In order to control erosion, the sides of the detention basin shall be planted with suitable landscape material.]

5. Surface and subsurface detention basins shall be designed in accordance with N.J.A.C. 7:8, the Stormwater Management Rules, and the NJDEP "New Jersey Stormwater BMP Manual," each incorporated herein by reference, as amended and supplemented. The New Jersey Stormwater BMP Manual is available online at http://www.state.nj.us/dep/stormwater/bmp_manual2.htm. The following are exceptions to the above requirements:

i. The design storm shall be reduced to the 25-year storm unless constructed outside of the FEMA Special Flood Hazard Area (SFHA). The NJDEP stormwater quantity requirements, which include larger storm events, shall apply to areas outside of the SFHA.

ii. Backwater calculations shall be included in the design, per (b)4vii above.

iii. Subsurface detention systems that rely on infiltration for discharge shall only be designed in locations without known soil contamination or other issues which may threaten the quality of groundwater.

iv. (No change in text.)

6. Stormwater pollutant removal **[**requirements are as follows**]** **shall be performed in compliance with N.J.A.C. 7:8, the Stormwater Management Rules. In addition**:

[i. Install best management practices (BMP) to provide total suspended solids (TSS) load removal to the maximum extent feasible for post-construction runoff.

ii. Acceptable BMPs include extended detention basins, manufactured treatment devices, sand filters, constructed stormwater wetlands, infiltration systems, pervious pavement, wet ponds, and others, as approved by the NJMC.**]**

i. Stormwater quality control devices shall be installed off-line unless it is demonstrated that resuspension of collected soils will not occur during storm intensities or depths greater than the NJDEP Water Quality Storm, as defined in N.J.A.C. 7:8-5.5.

ii. Similar structural stormwater management measures may not be used in series to achieve the required 80-percent TSS removal unless approved by the NJMC.

iii. Stormwater management measures shall not receive stormwater runoff until the site has been stabilized per the Standards for Soil Erosion and Sediment Control in New Jersey at N.J.A.C. 2:90-1.3.

iv. All subsurface stormwater management measures shall have a clearly identified method of clean-out.

SUBCHAPTER 9. FLOODPLAIN MANAGEMENT

19:4-9.2 Purposes

This subchapter sets forth procedures and engineering and planning standards in accordance with which the **[**Commission**]** **NJMC** shall review and approve or disapprove applications for the development or use of land within the District. It is designed to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed: to protect human life and health; to minimize expenditure of public money for costly flood control projects; to minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; to minimize prolonged business interruptions; to minimize damage to new and existing construction; to minimize damage to public and private facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, and bridges located in areas of special flood hazard; to help maintain a stable tax base by providing for the second use and development of areas of special flood hazard so as to minimize future flood blight areas; to **[**insure**]** **ensure** that potential buyers are notified that property is in an area of special flood hazard; to ensure that those who own or occupy the areas of special flood hazard assume responsibility for their

actions; and generally to provide for the exercise of the powers regarding the review and regulation of land use and development conferred upon the **[**Commission**]** **NJMC** by Chapter 404 of the Laws of 1968. In order to accomplish its purpose, this subchapter includes methods and provisions for: restricting or prohibiting uses which are dangerous to health, safety and property due to water hazards, or which result in damaging increases in flood heights; requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction; controlling the alteration of natural flood plains, stream channels, and natural protective barriers which help accommodate or channel flood waters; controlling filling, grading, dredging and other development which may increase flood damage; and preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.

19:4-9.3 Words and phrases defined

Unless specifically defined in N.J.A.C. 19:4-2 or below, words or phrases used in this subchapter shall be interpreted so as to give them the meaning they have in common usage and to give this chapter its most reasonable application.

"Area of shallow flooding" means a designated AO or **[**VO**]** **AH** Zone on the Flood Insurance Rate Map (FIRM) **with a one percent or greater chance of flooding to an average depth of one to three feet where [**. The base flood depths range from one to three feet;] a clearly defined channel does not exist; **where** the path of flooding is unpredictable **[**and indeterminate**]**; and **[**,**]** **where** velocity flow may be evident**. Such flooding is characterized by ponding or sheet flow.**

"Development" means any man-made change to improved or unimproved real estate, including**,** but not limited to**,** building or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations**, or storage of equipment or materials located** within the area of special flood hazard.

"Elevated building" means a non-basement building that is:

1. In the case of a building in an area of special flood hazard, built to have the top of the elevated floor[;] **,** or in the case of a building in a coastal high hazard area, built to have the bottom of the lowest horizontal structural member of the elevated **[**flood**]** **floor,** elevated above the ground level by means of piling, columns (posts and piers), or shear walls parallel to the flow of the water; and

2. (No change.)

3. In an area of special flood hazard, "elevated building" also includes a building elevated by means of fill or solid foundation perimeter walls with openings sufficient to facilitate the unimpeded movement of flood waters. **[**In areas of coastal high hazard, "elevated building" also includes a building otherwise meeting the definition of "elevated building" even though the lower area is enclosed by means of breakaway walls.**]**

"FIA" means the Federal Insurance Administration

"Flood Insurance Rate Map" (FIRM) means the official map on which the Federal **[**Emergency Management Agency (FEMA)**]** **Insurance Administration** has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

"Flood insurance study" means the official report provided in which the **[**FEMA**]** **FIA** has provided flood profiles, as well as the FIRM's and the water surface elevation to the base flood.

"Highest adjacent grade" means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

"Historic structure" means any structure that is:

1. Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;

2. Certified or preliminarily determined by the Secretary of the Interior as contributing the historical significance of a registered historic district preliminarily determined by the Secretary to qualify as a registered historic district;

3. Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior; or

4. Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either by an approved state program as determined by the Secretary of the Interior or directly by the Secretary of the Interior in the states without approved programs.

"Manufactured home" means a structure, transportable in one or more sections, which is **built on a permanent chassis and designed to be used as a dwelling and complies with the standards of the New Jersey Uniform Construction Code, N.J.A.C. 5:23. [**at least 8 feet or more in width, or 40 body feet or more in length, or, when erected on site, is 320 or more square feet, and which is built on a permanent chassis and designed to be used as a dwelling with or without a permanent foundation when connected to the required utilities, and includes the plumbing, heating, air conditioning and electrical systems contained therein; except that such term shall also include any structure which meets all of the requirements of this paragraph except the size requirements and with respect to which the manufacturer has voluntarily filed a certification required by the Secretary of the United States Department of Housing and Urban Development and complies with the standards established under 42 U.S.C. §§ 5401 et seq. For flood plain management purposes, the term "manufactured home" also includes park trailers, travel trailers and other similar vehicles placed on a site for greater than 180 consecutive days. For insurance purposes, the**]** **The** term "manufactured home" does not include park trailers, travel trailers and other similar vehicles.

"New construction" means structures for which the "start of construction" commenced on or

after February 17, 2004 **and includes any subsequent improvements to such structures**.

"Recreational vehicle" means a vehicle that is:

1. Built on a single chassis;

2. 400 square feet or less when measured at the longest horizontal projections;

3. Designed to be self-propelled or permanently towable by a light duty truck; and

4. Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

"Start of construction" for other than new construction or substantial improvements under the Coastal Barrier Resources Act (P.L. 97-348), includes substantial improvement and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site such as the pouring of a slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearings, grading, and filling, nor does it include the excavation for a basement, footings, piers or foundations or the erection of temporary forms; nor does it include the installation on property of accessory buildings, such as garages or sheds not occupied as dwelling units or not as part of the main structure. **For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building whether or not that alteration affects the external dimensions of the building.**

"Substantial improvement" means any **[**repair,**]** reconstruction, **rehabilitation, addition,** or improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure **before the start of construction of the improvement. This term includes structures that have incurred substantial destruction, regardless of the actual repair work performed. [**either:

1. Before the improvements or repair is started; or

2. If the structure has been damaged and is being restored, before the damage occurred.

For the purposes of this definition, "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure.**]** The term does not, however, include either:

1. Any project for improvement of a structure to comply with existing State or local health, sanitary, or safety code specifications [which are solely necessary to assure safe living conditions] **that have been identified by the local code enforcement officer and that are the minimum necessary to assure safe living conditions; or**

2. Any alteration of a **historic** structure **[**listed on the National Register of Historic Places or a

State Inventory of Historic Places**]** **provided that the alteration will not preclude the structure's continued designation as a historic structure.**

19:4-9.5 Basis for establishing the areas of special flood hazard

The areas of special flood hazard identified by **[**FEMA**]** in a scientific and engineering report entitled, "Flood Insurance Study, Hackensack Meadowlands District, New Jersey, Bergen and Hudson Counties," dated **[**June 15, 1982**]** **September 30, 2005,** with accompanying FIRM, **[**Number 340570**]** **Panel numbers 0245G, 0252G, 0253G, 0254G, 0256G, 0257G, 0258G, 0259G, 0261G, 0262G, 0263G, 0264G, 0266G, 0267G, 0268G, 0307G, 0331G, and 0332G**, is hereby incorporated by reference, as amended and supplemented, and declared to be a part of this chapter. The Flood Insurance Study **[**is**]** **and FIRM mapping are** on file at the Offices of the New Jersey Meadowlands Commission, One DeKorte Park Plaza, Lyndhurst, New Jersey 07071.

19:4-9.10 Warning and disclaimer of liability

The degree of flood protection required by this subchapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This chapter does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This chapter shall not create liability on the part of the NJMC, any officer or employee thereof, or the **[**FEMA**]** **FIA** for any flood damages that result from reliance on this chapter or any administrative decision lawfully made thereunder.

19:4-9.13 Duties and responsibilities of the Chief Engineer

(a) The Chief Engineer shall administer the provisions of this subchapter in the manner set herein and in furtherance of such authority, shall, but not be limited to:

1. – 3. (No change.)

4. Maintain for public inspection all records pertaining to development permits, including: obtaining and recording the actual elevation (in relation to mean sea level) of the lowest [habitable] floor (including basement) of all new or substantially improved structures, and whether or not the structure contains a basement; verifying and recording the actual elevation (in relation to mean sea level) and maintaining flood proofing certifications for all new or substantially improved flood proofed structures;

5. Notify adjacent communities and the State Coordinating Agency for the National Flood Insurance Program prior to any alteration or relocation of a watercourse, and submit evidence of such notification to **[**FEMA**]** **the FIA**; require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished;

6. When base flood elevation data has not been provided in accordance with N.J.A.C. 19:4-9.5, basis for establishing the areas of special flood hazard, the Chief Engineer shall obtain, review, and reasonably utilize any base flood **elevation** data available from a Federal, State, or other source, in order to administer N.J.A.C. 19:4-9; and

7. (No change.)

19:4-9.14 Variances from floodplain regulations

(a) In cases in which there is exceptional hardship in carrying out the literal provision of this chapter, whether because of conflicting requirements or otherwise, the **[**Executive Director**]** **Commission** may authorize a variance from such provision. In passing upon requests for variances, the **[**Executive Director**]** **Commission** shall consider all technical evaluations; all relevant factors and standards specified in other sections of this chapter; and the following:

1. – 11. (No change.)

(b) (No change.)

19:4-9.15 Standards for the granting of variances

(a) (No change)

(b) Variances may be issued for the **[**reconstruction,**]** **repair or** rehabilitation **[**or restoration**]** of **historic** structures **[**listed on the National Register of Historic Places or the State Inventory of Historic Places, without regard to the procedures set forth in the remainder of this section**]** **upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.**

(c) – (f) (No change.)

19:4-9.16 Conditions

Upon consideration of the factors of N.J.A.C. 19:4-9.14(a) and the purposes of this chapter, the **[**Chief Engineer**]** **decision** may **[**attach**]** **impose** such conditions to the granting of variances as **[**it**]** deem**[**s**]****ed** necessary to reduce or minimize any potentially injurious effect of such variance upon other property in the neighborhood, and to carry out the general purpose and intent of this chapter. Failure to comply with any of the conditions or restrictions placed on a variance shall constitute a violation of this chapter.

19:4-9.17 Written decision and records

A written decision on an application for a variance shall be rendered **[**within eight weeks of the date of the public hearing**]** **in accordance with the procedure specified in N.J.A.C. 19:4-4.14**. The Chief Engineer shall maintain complete records of all actions with respect to applications for variances,

including technical information, and shall report any variances to the Federal Emergency Management Agency upon request.

19:4-9.18 Appeals

An appeal from an adverse decision of the **[**Chief Engineer or Executive Director**]** **Commission** made pursuant to this subchapter may be made in accordance with the provisions of N.J.A.C. 19:4-**[**4.17**]**.

19:4-9.20 Buildings

(a) Residential construction: New construction and substantial improvement of any residential structure shall have the lowest floor elevated to a minimum of one foot above the base flood elevation. **Adequate drainage paths shall be provided around structures on slopes to guide floodwaters around and away from proposed structures.**

(b) Non-residential construction: New construction and substantial improvement of any commercial, industrial or other non-residential structure shall either have the lowest floor**, including basement,** elevated a minimum of one foot above the base flood elevation, **and have adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures,** or together with **the attendant** utilities **and sanitary facilities** shall:

1. Be floodproof**ed**, so that below the elevation equal to one foot above the base flood elevation, the structure is water tight with walls impermeable to the passage of water;

2. – 3. (No change.).

(c) Manufactured homes shall be anchored in accordance with N.J.A.C. 19:4-9.23. **[**All manufactured homes shall be anchored to resist flotation, collapse or lateral movement. Methods of anchoring may include, but are not to be limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable State and local anchoring requirements for resisting wind forces.**]**

(d) (No change.)

19:4-9.26 Enclosure openings

(a) For all new construction and substantial improvements, fully enclosed areas below the lowest floor that are **usable solely for parking of vehicles, building access or storage in an area other than a basement and that are** subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a **[**registered**]** **licensed** professional engineer or **registered** architect or must meet or exceed the following minimum criteria:

1. – 3. (No change.)